

We claim:

1. A process for the continuous preparation of polybutylene terephthalate from terephthalic acid and 1,4-butanediol, comprising:
  - a) direct esterification of terephthalic acid with 1,4-butanediol in a reactor cascade comprising at least two reactors,
  - b) precondensation of the esterification product obtained in stage a), and
  - c) polycondensation of the precondensate obtained in stage b),wherein the reaction pressure decreases and the temperature does not increase along the reactor cascade in stage a).
2. A process as claimed in claim 1, wherein the esterification in stage a) is carried out at pressures of  $< 1$  bar.
3. A process as claimed in claim 1 or 2, wherein, in a reactor cascade comprising three reactors, the pressure in the first reactor ( $p_1$ ) is  $< 1$  bar, the pressure in the second reactor ( $p_2$ ) is  $< p_1 - 100$  mbar and the pressure in the third reactor ( $p_3$ ) is  $< p_2$ .
4. A process as claimed in any of claims 1 to 3, wherein stage a) is carried out at from 170 to 250°C.
5. A process as claimed in any of claims 1 to 4, wherein the molar ratio of 1,4-butanediol to terephthalic acid at the beginning of stage a) is from 1.1:1 to 3.5:1.
6. A process as claimed in any of claims 1 to 5, wherein the conversion after the last reactor of stage a) is  $> 97\%$ , based on terephthalic acid, before the precondensation in stage b) commences.
7. A process as claimed in any of claims 1 to 6, wherein stage a) is carried out in the presence of a catalyst, preferably tetrabutyl orthotitanate.

FOOTNOTES

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8. A process as claimed in any of claims 1 to 7, wherein stage b) is carried out at temperatures from 220 to 300°C and pressures in the range from 0.05 bar to the esterification pressure in the last reactor of the reactor cascade of stage a).
  9. A process as claimed in any of claims 1 to 8, wherein the precondensate obtained in stage b) is polycondensed in stage c) at from 240 to 290°C and pressures of from 0.2 to 20 mbar.
  10. A process as claimed in claim 9, wherein the polycondensation is continued until the polycondensate obtained has an acid number of < 50 meq/kg.

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